114798

U.S. Department
of Transportation

**FEDERAL AVIATION
ADMINISTRATION**
Office of Aviation Policy and Plans

Washington, D.C. 20591

FAA-00-5833-17

# REGULATORY EVALUATION, REGULATORY FLEXIBILITY DETERMINATION, TRADE IMPACT ASSESSMENT, AND UNFUNDED MANDATE REFORM ACT ASSESSMENT

## LICENSING AND SAFETY REQUIREMENTS FOR OPERATION OF A LAUNCH SITE
## (14 CFR PART 401, 417, 420)

**OFFICE OF AVIATION POLICY AND PLANS**
**OPERATIONS REGULATORY ANALYSIS BRANCH, APO-310**
**GARY BECKER**
**OCTOBER, 2000**

## TABLE OF CONTENTS

# 1. EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA) is amending its commercial space licensing regulations to add licensing requirements for the operation of a launch site. The final rule will provide launch site operators with licensing and operating requirements to protect the public from the risks associated with operations at a launch site. The FAA currently issues licenses to launch site operators on a case-by-case approach. Elements of that approach are reflected in the guidelines, "Site Operators License Guidelines for Applicants," dated August 1995, which describe the information that applicants provide the FAA for a license to operate a launch site. The FAA's interpretation and implementation of the guidelines constitute another element of the case-by-case approach and additional elements, such as policy review, not reflected in the guidelines.

The final rule represents quantifiable changes from the guidelines (current practice) in the following two areas -- the launch site location review and approval and the launch site operations review and approval. The FAA has estimated the costs and cost savings of these changes over a 10-year period discounted at 7 percent in 2000 dollars. The total 10-year undiscounted cost savings are estimated to be between $93,000 and $172,000 (or between $65,000 and $124,000, discounted). Although there will be no cost impact to the FAA, there will be cost savings to the FAA from the most burdensome cost scenario of $114,000 (or $84,000, discounted).

There are significant nonquantifiable benefits in two areas. First, the final rule eliminates overlapping responsibilities for launch site operators and launch operators. Second, the final rule provides increased details and specificity that are not present in the guidelines.

The final rule is not expected to have a significant impact on international trade nor is it expected to have a significant impact on a substantial number of small entities. The final rule does not contain any Federal intergovernmental or private sector mandate.

## 2. BACKGROUND AND INDUSTRY PROFILE

### 2.1 Background

The Commercial Space Launch Act of 1984, as amended, and codified in 49 U.S.C. Subtitle IX, ch. 701, Commercial Space Launch Activities, 49 U.S.C. 70101-70121 (the Act) authorizes the Secretary of Transportation to oversee, license, and regulate launches and the operation of a launch site as carried out by a U.S. citizen or within the United States.[1] The Act directs the Secretary to exercise this responsibility consistent with public health and public safety, safety of property, national security, and the foreign policy interests of the United States.[2]

On August 4, 1994, President Clinton announced a new National Space Transportation Policy reaffirming the government's commitment to the commercial space transportation industry and to the critical role of the Department of Transportation (DOT) in encouraging and facilitating private sector launch activities.

On November 15, 1995, the Secretary's responsibilities, which had been within the Office of the Secretary in the Department of Transportation, were delegated to the Associate Administrator for Commercial Space Transportation (AST) within

[1] 49 U.S.C. 70104, 70105.

the Federal Aviation Administration. The Associate Administrator for Commercial Space Transportation now carries out the Secretary's responsibilities for licensing launches and the operation of launch sites, and for encouraging, facilitating and promoting commercial space launches by the private sector.

The current regulations governing the issuance of a launch site operator are at 14 CFR Part 417. 14 CFR § 417.101 states that the FAA evaluates on an individual basis an applicant's proposal to operate a launch site. Section 417.103 adds that the FAA issues a license to operate a launch site after it has determined that an applicant's operation of the launch site does not jeopardize public health and public safety, safety of property, U.S. national security, and the foreign policy interests or international obligations of the United States. The FAA has also released information guidelines, dated August 1995, that describe the information that a launch site operator applicant should provide the FAA in order to receive a license to operate a launch site.

## 2.2 Industry Profile

The FAA has issued licenses to operate launch sites to the four organizations indicated in Figure 2.1. On September 19, 1996, the FAA granted the first license to operate a launch site to Spaceport Systems International whose launch site, California Spaceport, is located within Vandenberg Air Force Base (VAFB). Three other launch site operators have received licenses. The Spaceport Florida

[2] 49 U.S.C. 70105.

Authority (SFA) received a FAA license to operate Launch Complex 46 at CCAS as a launch site. Virginia Commercial Space Flight Authority (VCSFA) received a license to operate Virginia Spaceflight Center (VSC) within NASA's Wallops Flight Facility. Most recently, Alaska Aerospace Development Corporation (AADC) received a license to operate Kodiak Launch Complex (KLC) on Kodiak Island, Alaska.

**Figure 2.1 Launch Site Operators, Launch Sites, and Locations**

| Launch Site Operator | Launch Site | Location |
|---|---|---|
| Spaceport Systems International [SSI] | California Spaceport (CSP) | On fed launch range |
| Spaceport Florida Authority (SFA) | Spaceport Florida (SPF) | On fed launch range |
| Virginia Commercial Space Flight Authority (VCSFA) | Virginia Commercial Space Flight Center (VCSFC) | On fed launch range |
| Alaska Aerospace Development Corporation (AADC) | Kodiak Launch Complex (KLC) | Not on fed launch range |

Launch sites may be located either within the confines of federal launch ranges [such as the California Spaceport within Vandenberg Air Force Base], or outside of federal launch ranges [such as the Kodiak Launch Complex in Alaska].

This analysis quantifies the economic impact of four license situations. They are shown in Figure 2.2. The four situations shown were selected because the costs of licensing each situation will be similar for all licenses within that situation.

The examples shown in Figure 2.2 represent two additional application situations that are not shown in Figure 2.1. They are an application to renew a license issued for a launch site on a federal launch range and an application to renew a license for a launch site not located on a federal launch range.

**Figure 2.2 Four Basic License Situations**

| License Type | Site Location | Launch Site |
|---|---|---|
| First time license | Launch Site on federal launch range | CSP, SPF, VCSFC |
| First time license | Launch Site off federal launch range | KLC |
| Renewal[3] | Launch Site on federal launch range | CSP, SPF, VCSFC |
| Renewal [6] | Launch Site off federal launch range | KLC |

Estimates of the costs associated with each of the four situations can be made based on the FAA's experience issuing licenses and launch site operators' estimates of the time required to perform analyses required by the final rule[4]. Once an estimate is made for each license situation these estimates can be applied to forecasts of future launch site applications to derive an estimate of the costs of the final rule relative to current practice.

*Launch Site Operator License*

[3] License originally issued under current practice.

[4] Princeton Synergetics, Inc. and Jones Technologies, Inc. contacted Spaceport Florida Authority, Virginia Commonwealth Space Flight Authority and Spaceport Systems International, L.P. several times during February and March, 1998. At that time, only three licenses had been issued. A fourth license has since been issued.

For those launch sites that are located within a federal launch range, launch site operators generally lease land and facilities from the federal launch range operator. Under the existing guidelines (current practice), an applicant develops a Launch Site Safety Operations Document (LSSOD) based in part on federal launch range requirements, such as Eastern and Western Range Requirement 127-1 (October 1997).[5] The FAA's acceptance of the LSSOD is based on the fact that the Federal launch range approves the ground safety plan, the approval is within the Federal launch range's experience, and the plan contains the elements listed in the information guidelines.

For those sites that are not located within a federal launch range, an applicant is not obligated to comply with federal launch range procedures nor is the applicant under the continuing oversight of a federal launch range.

*Launch Sites Located on a Federal Launch Range*

The first launch site operator license issued on September 19, 1996 to Spaceport Systems International, L.P. (SSI) authorized SSI to operate California Spaceport (CSP) as a launch site at Vandenberg Air Force Base, California. This license will serve as one example of a license issued under current practice for a commercial launch site located on a federal launch range. Two other commercial launch site operator licenses, for sites located on federal launch ranges, have been

[5] United States Air Force, Eastern and Western Range 127-1, Range Safety Requirements (EWR 127-1), Florida, October 1997.

issued--Spaceport Florida Authority, which is authorized to operate Complex 46, on Cape Canaveral Air Station, Florida, and Virginia Commercial Space Flight Authority, which is authorized to operate a launch site on NASA's Wallops Flight Facility, Virginia, will also serve in the analysis to represent commercial launch sites that are located on federal launch ranges.

However, these three launch sites located on federal launch ranges are not representative of all possible launch sites. As mentioned earlier, the analysis will consider launch site operator licenses for two types of launch sites: one for launch sites located on a federal launch range like the above three licenses and one for launch sites not located on a federal launch range. The analysis will also consider the renewal of each of these types of licenses.

*Launch Sites not Located on a Federal Launch Range*

At this time, the Alaska Aerospace Development Corporation has received a license to operate the Kodiak Launch Complex in Alaska.

## 3. EXISTING GUIDELINES (CURRENT PRACTICE) AND FINAL RULE

### 3.1 Overview of Differences Between Existing Guidelines (Current Practice) and the Final Rule

The costs and benefits of this final rule are determined by comparing operations under the final rule with a base case. The base case is referred to as the existing guidelines (current practice)[6] scenario in this report. The final rule is somewhat different from the proposal. Those differences will be highlighted at the end of Section 3.

The requirements for an applicant to obtain a license are changed under the final rule as compared to the guidelines (current practice). The environmental review is the only requirement that does not change. The launch site location review is more detailed, and the launch site operations review is no longer required. Under the final rule, an applicant must submit an explosive site plan. A new policy review is explicitly added which covers the non-environmental/non-safety portion of the application process. Lastly, the final rule explicitly separates the requirements for an applicant to obtain a launch site operator license from the responsibilities of a launch site operator after the FAA issues a license.

## 3.2 Guidelines (Current Practice) Versus Final Rule

### 3.2.1 Environmental Review and Determination

The requirements are the same under the final rule and the guidelines (current practice).

### 3.2.2 Launch Site Location Review and Approval

*Guidelines (Current Practice):* Under the guidelines (current practice), an applicant provides information to AST such as the launch site location, size, and topographic and geological characteristics; proximity to populated areas; and any local commercial and recreational activities that may be affected by launches. An applicant will also be required to describe the planned possible flight paths and general impact areas designated for future launches, and climate and meteorological data that may affect the safety of launch site operations. In addition, the applicant will have to provide safety analyses for generic sets of launch vehicles. The FAA then assesses the adequacy of the launch site location to support safe launches. The guidelines, however, do not provide explicit criteria for approval or specify types or classes of launch vehicles.

*Final Rule*: Under the final rule, an applicant will be required to conduct an analysis that objectively determines whether the location of a proposed launch site can support the launch of an orbital expendable launch vehicle, a guided sub-orbital expendable launch vehicle, an unguided sub-orbital expendable launch vehicle, or a reusable launch vehicle. Each prepared launch point on the launch site must be evaluated for each type of launch vehicle that the applicant wishes to have launched from a launch point. The license will be limited to vehicle types and classes (no larger or different than) that were selected by the

[6] FAA current practice requires that an applicant adhere to the Site Operator License Guidelines

applicant in the application analysis. A license will have to be modified in the future if the applicant proposes using the site for larger or different classes of vehicles.

*Difference*: The guidelines (current practice) and final rule differ in breadth and specificity. The final rule is narrower in scope because an applicant is only required to demonstrate that one launch for each type of launch vehicle can take place safely. Additionally, the FAA does not require an applicant to analyze the risks posed by the planned impact of normally jettisoned stages from a guided launch vehicle, except for the final stage of a guided suborbital launch vehicle. This assumption is made because the trajectory for a guided launch vehicle can be designed so that the risks from nominally jettisoned stages can be kept to acceptable levels. It is supported by risk calculations performed for launches from the federal launch ranges that demonstrate a relatively low risk posed by controlled disposition of stages in comparison to the risk posed by wide-spread dispersion of debris due to vehicle failure.

It should be noted that the focus of FAA's launch site location review methods is on expendable launch vehicles with a launch history. The reusable launch vehicles (RLV) currently proposed by industry are much different than these. Accordingly, the FAA believes that it should not define a detailed analytical method for determining the suitability of a launch site location for RLV's. An

supplemented by additional FAA guidance.

applicant proposing a launch site limited to the launch of reusable launch vehicles will still need to define a flight corridor and conduct a risk analysis if population were present in the flight corridor, but the FAA will review such an analysis on a case-by-case basis as is done now under the current guidelines.

### 3.2.3 Launch Site Operations Review and Approval

*Current*: An applicant currently performs a hazard analysis and submits an Launch Site Safety Operations Document (LSSOD) under current practice to obtain a license. A licensee is responsible for complying with its LSSOD[7].

*Final Rule*: The launch site operator is no longer required to submit a LSSOD or perform a hazard analysis. Instead, the final rule defines licensee responsibilities, as discussed in 3.4.6 below.

*Difference*: An LSSOD and a hazard analysis will no longer be required of the launch site operator under the final rule. Moreover, the safety of preparing a launch vehicle for flight is primarily the responsibility of the launch operator under the final rule.

### 3.2.4 Explosive Site Plan Review and Approval

*Current*: No Quantity-Distance (Q-D) requirements are explicitly included in the current practice guidelines. However, an applicant must conduct a hazard analysis to demonstrate that the applicant fully understands and has plans to handle the hazards that launch site operations might pose to the public. This analysis must identify each foreseeable launch site hazard, including explosive hazards, and identify mitigation measures to control or reduce the risks associated with those hazards, particularly as they relate to site layout and facility design, etc. The standard industry and federal launch range approach to mitigating risks associated with liquid and solid propellants, and other explosives, is to separate them from the public and each other by prescribed distances based on quantity of explosive material and the explosive potential of that material. The final rule essentially codifies current industry federal launch range practice. Other hazards such as toxic materials and electromagnetic radiation (RF) will be addressed in the hazard analysis along with specific mitigation measures.

*Final Rule*: Under the final rule, an applicant will be required to submit an explosive site plan that complies with (Q-D)[8] relationships defined in the final rule. These Q-D requirements apply to areas on a launch site where liquid and

[7] Includes details of safety policies and procedures, safety organization and personnel qualifications, facility layout, facilities and equipment, facility users, facility access/security, emergency response plans and accident investigation plans.

[8] The quantity of explosive material and distance separation relationships that provide defined types of protection. These relationships are based on levels of risk considered acceptable for the stipulated exposure and are tabulated in quantity-distance tables.

solid propellants are located. There is no requirement to consider the siting of toxic materials, or separation requirements for sources that emit RF.

*Difference:* One difference is that the final rule provides a standard for mitigating explosive risks. The scope of safety issues relating to site layout and facility design/limitations is far more extensive than under current practice. Another difference is that under the final rule, the applicant is not required to consider the siting of toxic materials or separation requirements for sources that emit RF. These hazards are addressed in the hazard analysis under current practice, and through scheduling under the final rule.

### 3.2.5 Policy Review and Approval

*Current*: The policy review and approval are not specified in the guidelines. However, the FAA does consider the same policy issues under current practice.

*Final rule*: An applicant will be required to submit information identifying foreign ownership of the applicant, and the FAA will determine, before issuing a license, if issuance of such a license will jeopardize the foreign policy or national security interests of the U.S.

*Difference:* Since the FAA currently does look at those same policy issues, the only difference will be that the final rule explicitly states that a formal review and approval will occur.

### 3.2.6 Licensee Responsibilities for Operations

*Current*: Under current practice a launch site operator performs a number of activities to protect the public from all ground operations on the launch site, much the same way the range commander at a federal range is responsible for the day to day activities that he/she permits on the property. However, a launch operator license holds the launch operator responsible for activities that involve preparing the launch vehicle for launch and launching the vehicle. Under current practice and the final rule, launch operators are responsible for complying with the launch site operator's rules and FAA requirements.

*Final Rule*: The following operational safety elements are requirements of a license under the final rule:

a. Controlling public access

b. Scheduling launch site operations

c. Notifying the public

d. Investigating mishaps

e. Maintaining records

Activities associated with the preparation of a launch vehicle for launch and the launch itself are the responsibilities of a launch operator under a launch license. A launch site operator can contractually provide these services for a launch operator but it is the launch operator who bears the ultimate responsibility for these activities under an FAA license.

*Difference*: The launch site operator will only be responsible for the five operational safety elements listed above, whereas under current practice the launch site operator is responsible for protecting the public "from the day-to-day hazards that exist at an industrial facility designed to support the launch of launch vehicles."[9]

The final rule does not cover hazardous operations at a launch site that are not performed for a specific mission by or for a specific launch operator (i.e., they are covered by the launch operator). For this analysis, the safety of any such operations are presumed to be adequately covered by other regulatory agencies. Equipment testing, operational limits, qualifications of safety personnel, and other safety elements are the responsibility of launch licensees.

### 3.3 Changes made to the Final Rule after the Proposal was Published

[9] Site Operators License Guidelines for Applicants, August 1995, U.S. Department of Transportation.

The costs and benefits of this final rule are determined by comparing operations assuming a base case and assuming compliance with the final rule.

However, compared to the proposal, the final rule has been modified. Following is a list of those changes.

**Changes in Final Rule from NPRM:**

- The launch site location review regulatory text has been expanded to better describe the launch site location review for both ELVs and RLVs. The appendices of the final rule are almost identical to the appendices in the proposal.

- The multipliers in the launch site location review have been taken out. In the proposal, an applicant was to estimate the expected casualty within a flight corridor (for a guided vehicle) or set of impact dispersion areas (for an unguided vehicle), and then multiply the answer by a constant. This was proposed to add conservatism to the answer. Based on comments received, and reconsideration by the FAA, these multipliers have been taken out.

- After an applicant has developed a flight corridor using either appendix A or B, the applicant must analyze the risk to population inside the flight corridor using appendix C. The approach in appendix C has changed. In the

NPRM, the statistical distance between the flight corridor centerline and the boundary of the flight corridor was assumed, for purposes of the appendix C analysis, to be five standard deviations, or 5-sigma. This has been changed. For purposes of the risk analysis, this distance is now assumed to be 3-sigma. The problem with the NPRM approach was that population near the flight corridor boundary had very little effect on the final estimated risk level. This is because the statistical probability of an event occurring between 3-sigma and 5-sigma is extremely small.

- The definition of "mishap" was moved to section 401.5 and was modified to include launch site accidents.

- The accident investigation plan section has been modified to require a licensee to cooperate with NTSB or FAA officials investigating a launch mishap. The proposal only required licensees to cooperate with NTSB or FAA officials investigating launch site mishaps.

- The regulatory text has been modified to clarify that the Coast Guard and FAA agreements must be completed during the application process, and must be complied with during the term of the license.

- The NPRM did not require an applicant proposing to locate a launch site at a federal launch range to submit an explosive site plan. In the final rule, the

applicant must submit to the FAA a copy of the explosive site plan submitted to the federal launch range operator. The small additional cost associated with photocopying the explosive site plan and sending it to the FAA is expected to be minimal.

- Quantity-Distance requirements for explosive division 1.1 were added. Requirements for explosive division 1.1 were not included in the NPRM because the FAA assumed such explosives would not be present at commercial launch sites in sufficient enough quantities to effect Q-D. This is not an appropriate assumption, based on comments and further research by the FAA. So, procedures were added to the regulation to handle division 1.1 explosives.

- The Explosives section was moved from "Application Requirement" to "Licensee Responsibility" because explosive safety is an ongoing responsibility of a licensee, and for ease of reference for a licensee.

- The Q-D rule for solid and liquid propellants located together has changed. The required separation distance proposed in the NPRM was the greater of the distance determined by the explosive equivalent of the liquid propellant alone or the solid propellant alone. This assumed that generally, no credible scenario exists that could produce a simultaneous explosion reaction of both liquid propellant tanks and solid propellant motors. This requirement has

changed because it is still possible for a simultaneous explosion reaction of both to occur. An applicant has the option of conducting an analysis of the maximum credible event (MCE), or the worst case explosion that is expected to occur.

- For explosive siting, the following statement was added: "The FAA evaluates on an individual basis explosive siting issues outside the scope of the requirements in §§ 420.65 - 420.69, consistent with current safety standards."

The requirement for an applicant to provide certain administrative information to the FAA has been added to the final rule. Specifically, an applicant must identify the name and address of the applicant, and the name, address, and telephone number of any person to whom inquiries and correspondence should be directed. An applicant must also provide the name and location of the proposed launch site, including downrange assets; and briefly describe the basic layout of the launch site, including launch points; the types of launch vehicles to be supported at each launch point; the range of launch azimuths planned from each launch point; and the scheduled operational date.

- A definition for "public" has been added to the regulatory text in order to clarify that the public includes people and property that are not involved in

supporting a licensed launch or launch site, and includes those people and property that may be located within the boundary of a launch site.

# 4. COSTS AND BENEFITS

## 4.1 Comparison of Benefits and Costs

The FAA published the proposed rule on the licensing and safety requirements for operation of a launch site on June 25, 1999. Interested parties were able to comment on these proposed rules at that time. The FAA reviewed all comments received and concluded that there were no comments on costs and benefits on any issues that warranted specific responses. The final rule represents quantifiable changes in costs compared to the current practice guidelines in the following two areas: the launch site location review and approval and the launch site operations review and approval. The FAA has estimated the costs and cost savings of these changes under two different cost scenarios over a 10-year period, discounted at 7 percent in 2000 dollars.[10] The most burdensome cost scenario (where net cost savings is the least) to the industry will result in the costs to the launch site operators of $24,000 (or $21,000, discounted) for the launch site location review provisions. As a result, there will only be a cost savings of $3,000 (or $2,000, discounted) for the launch site operations reviews and approval provisions. There will be no cost impact to the FAA; however, there will be a cost savings from the most burdensome cost scenario of $114,000 (or $84,000, discounted). The

[10] Some provisions may result in significant costs to launch site operators beyond the ten-year time horizon of this analysis. For example, in certain instances, launch site operators may have to

estimated net cost savings of compliance to both the FAA and the launch site operator is $93,000 (or $65,000, discounted) under the most burdensome cost scenario.

Table 4.1 summarizes the quantifiable 10-year undiscounted and discounted costs and cost savings of the final rule.

**Table 4.1 Summary of Quantifiable Costs and Cost Savings of the Final Rule for Launch Site Operators and the FAA (2000 dollars)***

| Final Section | Description | 10-Year Undiscounted Costs or (Cost Savings) | 10-Year Discounted Costs or (Cost Savings) |
|---|---|---|---|
| 420.19 & Appendices A - D | Launch Site Location Review and Approval | $19,000 | $17,000 |
| Not Required by Final Rule | Launch Site Operations Review and Approval | ($111,000 - $190,000)[11] | ($83,000 - $141,000)[13] |
| **Total** | | **($93,000 - $172,000)** | **($65,000-$124,000)** |

- See Table A.11 for a more detailed explanation. Numbers may not sum due to rounding.

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September 2000.

The other topics in the final rule are: Policy Review and Approval, the Explosive Site Plan Review and Approval, and Operational Responsibilities. The first two (Policy Review and Approval, and Explosive Site Plan Review

show the absence of people in the overflight exclusion zone. The FAA is not able to estimate these costs or when these costs will occur.

[11] The indicated range is the result of using low and average cost estimates. Estimates of the cost to complete the launch site operations review and approval for three licenses were provided by both the FAA and launch site operators. The "average cost estimate" is the average of cost data obtained on the three licenses. The lowest cost estimate was the lowest of the three license cost estimates.

and Approval) are effectively the same under current practice and under the final rule, except that the final rule more clearly states the requirements. Therefore, there will be no quantifiable costs or cost savings. The third (Operational Responsibilities) is expected to eliminate duplication and confusion as will be explained further in Sections 4.3.3 and 4.4.3.

## 4.2 General Methodology, Overview and Assumptions

The FAA considered a 10-year time horizon from 2001 to 2010. Costs were discounted at 7 percent using 2000 dollars. Table A.1 in the Appendix provides a summary of the wage rates used in the analysis. Table A.2 in the Appendix shows a forecast of licenses issued and renewed. It is assumed that the licenses will be issued in the same year as the application costs are incurred. When costs and benefits are mentioned it will be relative to current practice, which includes the guidelines.

There are two types of launch sites: those located on a federal launch range and those located off of a federal launch range. For launch sites that are located on federal launch ranges, an applicant, in most cases, does not have to do a launch site location analysis under either current practice, which includes the guidelines, or the final rule.[12] Applicants proposing a launch site not on a federal launch range will have to use very specific methods provided in the final

[12] However, a small amount of time for both the FAA and applicants was spent assessing the launch site location under current practice, which includes the guidelines.

rule to demonstrate the suitability of the launch site location for launching at least one type (orbital, guided suborbital, or unguided suborbital) of launch vehicle.

New Licenses

A launch site license is valid for a period of five years, both under current practice and under the final rule. In the analysis it is assumed that all licenses will be renewed after five years.

Costs and cost savings will be incurred for each license application. All costs and cost savings are due to changes in paperwork. The applicant will incur costs supplying information to the FAA and the FAA will incur costs analyzing and accepting the license information. This analysis quantifies the differences in cost between current practice, which includes the guidelines, and the final rule in those areas in which there are quantifiable differences between the two: the launch site location review and approval and the launch site operations review and approval.

The FAA estimated the number of hours to review and accept the documentation supplied by previous applicants as part of both the launch site operations review and approval and the launch site location review and approval (see Table A-3). The estimated hours range from 300 to 720 for each license

for the launch site operations review and approval. These hours along with the estimated loaded hourly wage rates and total costs are presented in Table A.3 of the Appendix. These hours will be hours saved by the FAA under the final rule and will result in cost savings to the FAA. A low estimate (representing the smallest cost savings [13]) and an average estimate of cost savings are provided.

Launch site operators[14] provided estimates of the time needed for each current requirement assuming that the requirements will no longer be necessary under the final rule: the LSSOD, the hazard analyses and the description of daily operations. The estimated number of hours ranges from 40 to 500. These hours will be the time saved under the final rule and will result in cost savings to the launch site operator. These hours along with the estimated loaded hourly wage rates and total cost savings per license are presented in detail in Table A.4 of the Appendix. A low estimate of 40 hours (conservative) and an average estimate of 260 hours ((500+40+240)/3) are indicated.

However, the FAA believes that launch site operators will not be fully relieved of the responsibilities. Although data are not available, the FAA believes that operator costs (primarily paperwork) will decline by only 75 percent as a result of this change (See Table A-4). Other requirements such as existing section 420.15(e) will still require operators to comply with operational requirements.

[13] Represents the greatest cost impact (smallest cost savings) to the industry.
[14] Princeton Synergetics, Inc. and Jones Technologies, Inc. contacted Spaceport Florida Authority, Virginia Commonwealth Space Flight Authority and Spaceport Systems International, L.P. several times during February and March, 1998.

Renewals

There are three situations to consider with respect to a license renewal:

1. A license originally issued under the guidelines and renewed under the guidelines;

2. A license originally issued under the guidelines and renewed under the final rule;

3. A license originally issued under the final rule and renewed under the final rule.

The FAA expects that the costs associated with 1 and 3 will be negligible and have not been quantified. The costs should be negligible because a licensee is required to amend its license whenever the operation of the launch site differs from that represented in its application. Therefore, a renewal should not entail any new material. Two possible exceptions are if the population near the launch site or downrange from the launch site changes significantly during the term of the license. The FAA assumes for the analysis that this will not occur within the ten-year time frame.

The only renewal scenario that might show a differential will be associated with situation number 2, i.e., licenses that were originally issued under current practice and renewed under the final rule. However, as discussed below these costs are also expected to be negligible and have not been quantified.

A licensee must keep its license up-to-date, and therefore the costs associated with a renewal in situation 2 should be due only to the difference between the guidelines (current practice) and the final rule. The environmental requirements have not changed. The costs of the Environmental Review and the Policy Review should be negligible because they are nearly identical to the guidelines (current practice). The costs of meeting Operational Responsibilities for renewal should also be negligible, because the renewal applicant's LSSOD should already include the responsibilities specified in the final rule. A renewal applicant's explosive site plan should also be similar under the current practice, which includes the guidelines. The only provision that might result in a cost impact is the launch site location review.

An applicant for a renewal will only need to conduct an analysis under the launch site location review if the applicant wishes its launch site to support the launch of launch vehicles larger or different than supported at that launch site under the old license. Under the terms of a launch site operator license, launch vehicles may only be launched from a launch site that is within the size and type specified in the license.

This restriction may be broadened in one of two ways: the first way is for a launch site operator to apply for a modification, and perform a new launch site location analysis. The second way, which may be easier, is for launch operators to apply to launch from launch sites regardless of the terms of particular launch site operator licenses. If a launch licensee is granted a license to launch from a particular launch site, that launch site automatically qualifies to support the size and type of launch vehicle in the launch license with the resulting change in the launch site operator license dealt with via modification of that license. Thus, it is unlikely that a launch site operator will need to be approved to support larger or different launch vehicles in its license renewals. The differential in costs for all license renewals between the final rule and current practice, which includes the guidelines, are expected to be negligible and have not been quantified.

### 4.3 Costs of the Final Rule by Major Provision

The following is organized by subpart found in the final rule.

#### 4.3.1 Subpart B: Criteria and Information Requirements for Obtaining a License:

The cost of complying with the criteria and information requirements section of the final rule for each type of license and for each party was estimated based on data provided by launch site operators and FAA. Data on the time required to complete the application process [from both the standpoint of the applicant and that of the FAA] is available for three currently licensed launch sites located on federal launch ranges. Estimates of the time required to license a launch site off a federal launch range were made based on the two license applications that are in the application or pre-application phase (at the time of the NPRM analysis) and internal FAA data available on the launch site location review. This data is used to establish an estimate of the differential in costs of applying for a license under the final rule compared to current practice. The details of the estimates are provided in the Appendix.

4.3.1.1 Information Requirements of Application

***Launch Site Location Review and Approval:***

Costs [15]

*Launch sites located on federal launch ranges.* The cost difference between the guidelines, which includes current practice, and the final rule, for applicants proposing to operate launch sites located on federal launch ranges is negligible

[15] All costs and costs savings are those associated with the final rule relative to current practice.

and has not been quantified. In most cases, an applicant will not have to do a launch site location analysis under either the guidelines or the final rule. However, the guidelines are more ambiguous and past application reviews, which also constitute a component of current practice, shows that a small amount of time for both the FAA and applicants was spent assessing the launch site location. This confusion does not exist under the final rule. The only time under the final rule that a launch site location review must be conducted for launch sites located on a federal launch range is when the applicant is proposing to use a different launch point than used in the past, or to use a launch point differently from how it was used in the past (i.e. for a different type or class of launch vehicle). However, this situation is not expected to occur within the time horizon of the analysis. Therefore, it is assumed that there is no difference between the guidelines and the final rule for licenses for launch sites located on federal launch ranges. Accordingly, the estimates of the costs and cost savings of the final rule did not include estimates of any time spent assessing the launch site location for launch sites located on federal ranges.

*Launch sites not located on federal launch ranges.* Although the guidelines broadly state that an applicant should provide all planned possible flight paths and general impact areas designated for future launch operations, the lack of specificity makes it difficult to assess the actual costs. The guidelines are broad because they were written for a case-by-case licensing approach. Because no available empirical data exists for the costs under the guidelines to an applicant,

a worst case approach will be taken. This analysis assumed negligible costs under the guidelines, thereby providing a high estimate of the costs of the final rule.

The final rule is estimated to cost the industry about $24,000 (or $21,000, discounted). It is expected to result in a cost savings to the FAA of about $5,000 (or $4,000, discounted), to administer these requirements under the final rule than it did under current practice. The costs/cost savings are summarized in Table 4.2 and presented in detail in Table A.10.

**Table 4.2 Launch Site Location Review and Approval – Undiscounted and Discounted Cost and Cost Savings – 2000 Dollars**

| | Launch Site Operator Total Costs | | FAA Total Cost Savings | |
|---|---|---|---|---|
| Year | Undiscounted | Discounted | Undiscounted | Discounted |
| 2001 | $10,896 | $10,183 | ($836) | ($781) |
| 2002 | $10,748 | $9,388 | ($836) | ($730) |
| 2003 | $0 | $0 | $0 | $0 |
| 2004 | $1,184 | $903 | ($836) | ($638) |
| 2005 | $0 | $0 | $0 | $0 |
| 2006 | $89 | $59 | ($836) | ($557) |
| 2007 | $0 | $0 | $0 | $0 |
| 2008 | $622 | $362 | ($836) | ($487) |
| 2009 | $0 | $0 | $0 | $0 |
| 2010 | $30 | $15 | ($836) | ($425) |
| Total | $23,569 | $20,911 | ($5,016) | ($3,618) |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September 2000.

*Launch Site Operations Review and Approval:*

Under the guidelines (current practice), an applicant submits a hazard analysis and a Launch Site Safety Operations Document (LSSOD). The hazard analysis is required to demonstrate that the applicant fully understands and has plans to deal with all hazards that launch site operations might pose to the public. An applicant would develop a LSSOD that also contains detailed, specific means for addressing safety issues in the operation of the launch site.[16] The LSSOD governs how the launch site will be operated on a day-by-day basis. In order to issue a license, the FAA must review and approve the hazard analysis and LSSOD in a Launch Site Operations Review and Approval.

The final rule eliminates the need for an applicant to develop a hazard analysis and eliminates the need to develop a LSSOD. Under the final rule, the FAA will not conduct a launch site operations review. The FAA is changing this to eliminate the redundancy of having both a launch site operator under its license and a launch operator[17] under its license manage many of the same risks associated with preparing and launching a launch vehicle.

[16] An LSSOD has the following elements: a) Safety Policies and Procedures, b) Safety Organization and Personnel Qualification, c) Facility Layout, d) Facilities and Equipment, e) Facility Users, f) Facility Access/Security, g) Emergency Response Plans, and h) accident Investigation Plans.

[17] A launch operator is responsible under its license for the hazards associated with preparing a launch vehicle for flight and for the flight of the vehicle.

Although the final rule does not require an LSSOD, the final rule enumerates a set of responsibilities. These include the control of public access, scheduling launch site operations, notifications[18], mishap investigation and recordkeeping. An applicant must state in its operation how it intends to meet these responsibilities.

Costs

The final rule will not result in any added costs for launch site operations review and approval. There will be some small cost savings.

Table 4.3 summarizes the per license cost to perform the activities that were required under the guidelines for the launch site operations review and approval. These activities, to the extent that they existed under the guidelines, will no longer be required under the final rule. Table 4.3 shows the average cost savings[19] and the smallest cost savings of the three. More detail is shown in Tables A.3 and A.4 of the Appendix.

[18] These include notifying users of the launch site of various safety-related limitations of the launch site and facilities provided by the launch site operator. An example is weight limitation on cranes. The lifting capability of a crane must be tested prior to its use in a hazardous operation.
[19] Based on the costs of the three launch site operators that provided data.

**Table 4.3 Per License Cost Differential to the Launch Site Operator and the FAA of Licenses Issued Under the Final Rule for Launch Site Operations Review and Approval – 2000 Dollars**

| | Launch Site Operator | | FAA | |
|---|---|---|---|---|
| | Average Cost (Cost Saving) Per License | Lowest Cost (Cost Saving) Per License | Average Cost (Cost Saving) Per License | Lowest Cost [20] (Cost Saving) Per License |
| **Launch Site Operations Review and Approval** | | | | |
| Describe Daily Operations | ($504) | ($395) | NA | NA |
| LSSOD [21] | ($585) | $0 | ($18,978) | ($9,105) |
| Hazard Analyses [22] | ($585) | $0 | ($6,518) | ($6,070) |
| **Total Cost Saved Per License** | **($1,674)** | **($395)** | **($25,496)** | **($15,512)** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September 2000.

Estimates of the cost to complete the launch site operations review and approval for three licenses were estimated by both the launch site operators and the FAA.[23] The average cost estimate is the mean of cost data obtained on the three licenses. Since some of these costs will no longer be incurred under the final rule, they are being used in the analysis to represent cost savings of the final

[20] Based on lowest overall license cost, separate analyses may not be lowest cost.

[21] Expected costs associated with launch site operator preparing and FAA reviewing the LSSOD.

[22] Expected costs associated with launch site operator preparing and FAA reviewing hazard analyses.

[23] Princeton Synergetics, Inc. and Jones Technologies, Inc. contacted Spaceport Florida Authority, Virginia Commonwealth Space Flight Authority and Spaceport Systems International, L.P. several times during February and March, 1998. At that time, only three licenses had been issued. A fourth license has since been issued.

rule. Therefore, using the lowest cost estimate will result in the smallest cost savings.

The FAA estimates that each launch site operator will incur cost savings of between $400[24] and $1,700[25] per license to meet its requirements under the final rule. The FAA will also incur cost savings between $16,000[25] and $25,000[26] per license to administer these requirements. These estimates are based on estimates of hours saved by the FAA and by industry as described in the Appendix.

The cost savings per license are then used in the schedule of forecasted launch licenses to obtain an annual and total undiscounted and discounted cost savings estimate. The total cost savings attributable to the launch site operations review and approval are presented in Table 4.4. Assuming the smallest cost savings to the industry, the FAA estimates that the total cost savings over 10 years will be about $111,000 (or $83,000, discounted).

***Explosive Site Plan Review and Approval***

While no Q-D requirements are specified in the guidelines, an applicant will have to conduct a hazard analysis to identify hazards, including explosive

[24] Based on lowest cost.
[25] Based on average cost.

hazards, and develop mitigation measures to eliminate or control the risks associated with each foreseeable launch site hazard. Therefore, the guidelines call for an explosive site plan. There will be no additional quantifiable costs under the final rule associated with this provision.

***Information for Policy Review and Approval:***

Although not specified in the guidelines, under current practice, the FAA reviews and approves the policy issues associated with a launch site operator license. The final rule will make this review explicit. There will therefore, be no new costs under the final rule associated with this provision.

**Table 4.4 Launch Site Operations Review and Approval - Cost and Cost Savings -2001-2010 2000 Dollars**

| | Total Costs | | Total (Cost Savings) | |
|---|---|---|---|---|
| **Low Estimate** | **Undis.** | **Disc.** | **Undis.** | **Disc.** |
| *Launch Site Operator* | $0 | $0 | ($2,762) | ($2,052) |
| *FAA* | $0 | $0 | ($108,582) | ($80,677) |
| **Total** | | | **($111,344)** | **($82,729)** |
| | | | | |
| **Average Estimate** | | | | |
| *Launch Site Operator* | $0 | $0 | ($11,718) | ($8,707) |
| *FAA* | $0 | $0 | ($178,471) | ($132,606) |
| **Total** | | | **($190,189)** | **($141,312)** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September 2000.

4.3.1.2 Clarification of Requirements of Licensing Process

The licensing process under the final rule will provide increased details and specificity compared to the guidelines. Consequently, the FAA expects applicants will spend less time interpreting the requirements. The actual amount of time saved cannot be quantified.

Costs

There will be cost savings because the final rule will save some time over current practice. These cost savings are non-quantifiable.

### 4.3.2 Subpart C - License Terms and Conditions

There is no difference between current practice and the final rule other than that the final rule codifies the license terms and conditions and therefore offers more clarity and certainty.

Costs

There are no quantifiable costs or cost savings under the final rule.

### 4.3.3 Subpart D - Licensee Responsibilities for Operations

Responsibilities - Under the guidelines (current practice) a licensee is responsible for operating the launch site in accordance with its LSSOD. Under the final rule, a launch site operator will be responsible for the following:

1. Controlling public access,
2. Scheduling launch site operations,
3. Notifying the public,
4. Investigating mishaps,
5. Maintaining records.

Other than the responsibilities listed above, the responsibility for hazards on the launch site associated with the preparation of a launch vehicle for flight and the flight itself are assigned to a launch operator in a launch license.

Costs

The final rule should not result in any quantifiable costs. There may be some non-quantifiable cost savings because the provisions under Subpart B appear to be less burdensome than the guidelines (current practice); however, they cannot be estimated.

## 4.4 Benefits of the Final Rule by Major Provision

### 4.4.1 Subpart B: Criteria and Information Requirements for Obtaining a License - Benefits

#### 4.4.1.1 Information Requirements of Application

***Launch Site Location Review and Approval:***

There are at least two non-quantifiable benefits. First, the final rule provides in some cases more certainty as to the suitability of the launch site for launch than the guidelines. Second, the applicant will be conducting a more clearly defined analysis, so there will be increased certainty compared to current practice where the information and analysis requirements are less specific.

***Launch Site Operations Review and Approval:***

The launch site operator is expected to incur fewer costs (cost savings), relative to current practice. The launch site operator will no longer be required to prepare an LSSOD or perform hazard analyses. Launch safety related to the preparation of a launch vehicle for flight is to be assigned to the launch operator under a launch operator license.

*Explosive Site Plan Review and Approval*

While no Q-D requirements are specified in the guidelines, an explosive site plan could be done under the guidelines as part of the hazard analysis. The final rule provides a clear standard for mitigating explosive risks by defining Q-D relationships.

***Information for Policy Review and Approval:***

The final rule explicitly states that a formal review and approval will occur, although under the current practice the FAA currently does this. However, under the final rule, the requirements regarding the policy review and approval are clearer than they are under current practice. The benefit of improved clarity is non-quantifiable.

4.4.1.2 Clarification of Requirements of Licensing Process

The final rule will add clarity and increase industry's certainty that license requirements will not likely change. Clarity also reduces misinterpretations by the applicant.

Because the final rule is clearer than current practice, the regulatory environment might provide new incentives to establish launch sites that might

not otherwise come into existence. The effect of this is most likely small since the number of expected new launch sites is small.

### 4.4.2 Subpart C - License Terms and Conditions

There is little difference between current practice and the final rule. However, the final rule codifies various terms and conditions, which provides more clarity and certainty to both the launch site operator and the FAA.

### 4.4.3 Subpart D - Licensee Responsibilities for Operations

#### Responsibilities

The benefits of the final rule are that the responsibilities are clearly spelled out and duplication of responsibilities is eliminated. This should result in less confusion.

## 5. CONCLUSION

The final rule represents quantifiable changes in costs relative to current practice, which includes the guidelines, in the following two areas: the launch site location review and approval and the launch site operations review and approval. The FAA has estimated the costs and cost savings of these changes under two different

cost scenarios over a 10-year period, discounted at 7 percent in 2000 dollars. The most burdensome cost scenario to the industry will result in a cost to launch site operators of $24,000 (or $21,000, discounted) for the launch site location review provisions (and a cost savings of $3,000 (or $2,000, discounted) for the launch site operations review and approval provisions). There will be no cost impact to the FAA, but there will be a cost savings from the most burdensome cost scenario of $114,000 (or $84,000, discounted). The estimated net cost savings of compliance to both the FAA and the launch site operators is $93,000 (or $65,000, discounted) under the most burdensome cost scenario.

There are significant non-quantifiable benefits in two areas. First, the final rule eliminates overlapping responsibilities. Second, the final rule provides increased details and specificity, which are not present in the guidelines.

The FAA concludes that the final rule is cost beneficial.

## 6. REGULATORY FLEXIBILITY DETERMINATION

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the Act requires

agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 act provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

## 6.1 Potentially Affected Entities

Entities who are licensed, or have begun the licensing process, were contacted to determine their size and to gain insight into the impacts of the final regulations on the licensing process. Spaceport Florida Authority (SFA), Spaceport Systems International, L.P. (SSI), the Virginia Commonwealth Space Flight Authority (VCSFA), and the Alaska Aerospace Development Corporation (AADC) are all licensed to operate launch sites.

The Virginia Commonwealth Space Flight Authority (VCSFA) is a not-for-profit subdivision of the Commonwealth of Virginia, responsible for oversight of the activities of the Virginia Commercial Space Flight Center (VCSFC). The VCSFC is located within the boundaries of the Wallops Flight Facility (WFF). As a subdivision of the Commonwealth of Virginia, the VCSFA is empowered by the Acts of the General Assembly to do all things necessary to carry out its mission of stimulating economic growth and education through commercial aerospace activities.

The Spaceport Florida Authority (SFA) was created by Florida's Governor and Legislature as the nation's first state government space agency. The authority was established to develop space-related enterprise, including launch activities, industrial development and education-related projects. SFA operates Spaceport Florida (SPF), located on Cape Canaveral Air Force Base.

Spaceport Systems International, L.P. (SSI), operates and manages California Spaceport, located on Vandenberg Air Force Base. SSI is the licensee and California Spaceport is the launch site. SSI is in partnership with ITT Federal Services Corporation (ITT FSC). ITT FSC is one of the largest U.S.-based technical and support services contractors in the world.

The Kodiak Launch Complex is operated by the Alaska Aerospace Development Corporation. AADC is a public corporation created by the State of Alaska to develop aerospace related economic and technical opportunities for the state.

### 6.2 Definition of Small Entities

The Small Business Administration has defined small business entities relating to space vehicles [SIC codes 3761, 3764 and 3769] as entities comprising fewer than 1000 employees. Although the above mentioned entities have fewer than 1000 employees in their immediate segment of the business, they are affiliated with/or funded by state governments and large parent companies. The VCSFA is a not-for-profit subdivision of the Commonwealth of Virginia; the SFA is a state government space agency; the SSI is affiliated with ITT FSC; and AADC is a state government sponsored corporation.

### 6.3 Conclusion

The FAA conducted the required review of this final rule and determined that it will not have a significant economic impact on a substantial number of small entities. Accordingly, pursuant to the regulatory Flexibility Act, U.S.C. 605(b), the Federal Aviation Administration certifies that this rule will not have a significant economic impact on a substantial number of small entities.

## 7. INTERNATIONAL TRADE IMPACT ASSESSMENT

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and where appropriate, that they be the basis for U.S. standards. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

The Licensing and Safety Requirements for Operation of a Launch Site (14 CFR Part 420) will not constitute a barrier to international trade, including the export

of U.S. goods and services out of the United States. The final rule affects launch sites that are currently located or being proposed within the United States.

The final rule is not expected to affect trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

## 8. UNFUNDED MANDATES REFORM ACT ASSESSMENT

The Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments.

Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in a $100 million or more expenditure (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

These final rule does not meet the cost thresholds described above. Furthermore, this final rule will not impose a significant cost or uniquely affect small governments. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

# APPENDIX A

# COST ESTIMATES

**Table A.1 Summary of Wage Rates Used in the Analysis- 2000 dollars.**

| FAA Wage Rates | 2000 | Hourly Wage | Load[26] Factor | Loaded Hrly Wage |
|---|---|---|---|---|
| GS 13 Step 5 | $69,008 | $33.18 | 1.26 | $41.80 |
| GS 14 Step 5 | $81,546 | $39.20 | 1.26 | $49.40 |
| GS 15 Step 5 | $95,923 | $46.12 | 1.26 | $58.11 |
| **Industry Hourly Wage Rates** | | | | |
| License #1 | | $20.83 | 1.23 | $25.62 |
| License #2[27] | | $32.08 | 1.23 | $39.46 |
| License #3 [28] | | $19.33 | 1.23 | $23.77 |
| Average Wage of Applicants | | $24.07 | 1.23 | $29.61 |
| Contractor Wage Rates[29] | | $48.94 | 1.23 | $60.20 |
| **Wage Rates for Relevant FAA Job Functions** | | | | |
| AST Licensing Supervisor [30] | | $54.28 | | |
| AST Engineer GS 13 | | $39.06 | | |
| AST Engineer GS 14 | | $46.14 | | |
| Legal Counsel[31] | | $50.21 | | |

Source for FAA Wage Rates: Pay Schedule, Office of Personnel Management, 2000.
Source for Industry Wage Rates: Launch Site Operators, February and March 1998.
Source for Contractor Wage Rates: Phil Brinkman, AST, FAA. April 1998.

[26] Load Factors Government Employees = 26% Private Sector = 23%, Source: Economic Analysis, pg. 4-17.

[27] Estimate made as to unburdened wage rate from burdened wage rate supplied by industry.

[28] Wage rate inflated to 2000 dollars from 1998 using GDP Price Deflator, budget for Fiscal Year 2001, Historical tables, Table 10-1, page 170, U.S. Government, Washington, DC 2000.

[29] Unloaded hourly wage rate given as $42 - $52 for contractors involved in safety evaluations, provided by AST, FAA.

[30] GS 14 Step 5.

[31] Averaged GS 14 Step 5 and GS 15 Step 5 Wage Rates.

**Table A.2 Forecasted Schedule of Launch Site Operator License Issuances and Renewals 2001 – 2010**

| License Type* | Year 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| LSO | 1 | 1 | | 1 | | 1 | | 1 | | 1 |
| LSOFR | | 1 | | | | | | | | |
| RLSO | | | 1 | | | 1 | 1 | | 1 | |
| RLSOFR | 1 | 2 | | | | 1 | 3 | | | |

***License Type Key**

| | |
|---|---|
| LSO | Launch site operator license for launch site not located on federal launch range issued for the first time under the final rule. |
| LSOFR | Launch site operator license for launch site located on federal launch range issued for the first time under the final rule. |
| RLSO | Renewal of launch site operator license for launch site not located on federal launch range. |
| RLSOFR | Renewal of launch site operator license for launch site located on federal launch range. |

Source: U.S. Department of Transportation, Federal Aviation Administration, Associate Administrator for Commercial Space Transportation, Space Systems Development Division, 2000.

**Table A.3 Per License Cost Savings to FAA Resulting from no Longer Having to Complete Portions Of First Time Launch Site Operator License Application Under the Final Rule-2000 dollars.**

| | Total Hours License Number | | | Hourly Loaded Wage Rates License Number | | Costs of Activities No Longer Required Under Final Rule License Number | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | #1 | #2 | #3 | #1 | #2/#3 | #1 | #2 | #3 | Average | Lowest |
| **Location Site Analysis** | | | | | | | | | | |
| *AST Engineer* | 42 | 20 | 42 | $41.80 | $49.40 | $1,756 | $988 | $2,075 | | |
| *Legal Counsel* | 5 | | 5 | $50.21 | $50.21 | $251 | | $251 | | |
| *Contractor Support* | 7 | 40 | 7 | $60.20 | $60.20 | $421 | $2,408 | $421 | | |
| **Total Location Analysis** | **54** | **60** | **54** | | | **$2,428** | **$3,396** | **$2,747** | **$2,857** | **$2,428** |
| **Launch Site Operations Review and Approval** | | | | | | | | | | |
| **A. Review/Acceptance of LSSOD** | | | | | | | | | | |
| *AST Engineer* | 187 | 80 | 139 | $41.80 | $49.40 | $7,817 | $3,952 | $6,867 | | |
| *Legal Counsel* | | | 17 | $50.21 | $50.21 | | | $854 | | |
| *Contractor Support* | 67 | 532 | 23 | $60.20 | $60.20 | $4,033 | $32,026 | $1,385 | | |
| **Total Review/Acceptance of LSSOD** | **254** | **612** | **179** | | | **$11,850** | **$35,978** | **$9,106** | **$18,978** | **$9,106** |
| **B. Hazard Analyses** | | | | | | | | | | |
| *AST Engineer* | 93 | 40 | 98 | $41.80 | $49.40 | $3,887 | $1,976 | $4,841 | | |
| *Legal Counsel* | | | 12 | $50.21 | $50.21 | | | $603 | | |
| *Contractor Support* | 53 | 68 | 16 | $60.20 | $60.20 | $3,191 | $4,094 | $963 | | |
| **Total Hazard Analyses** | **146** | **108** | **126** | | | **$7,078** | **$6,070** | **$6,407** | **$6,518** | **$6,070** |
| **Total Hours Saved** | **454** | **780** | **359** | | | **$21,356** | **$45,444** | **$18,260** | **$28,353** | **$18,260** |
| **Total Launch Site Operations Review and Approval** | **400** | **720** | **305** | | | **$18,928** | **$42,048** | **$15,513** | **$25,496** | **$15,513** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Associate Administrator for Commercial Space Transportation, Space Systems Development Division, 2000.

**Table A.4 Cost Savings to Launch Site Operator Resulting from no Longer Having to Complete Portions of First Time Launch Site Operator License Application Under the Final Rule-2000 dollars**

| Activities that will no longer required Required under the Final Rule | Hours Per License | | | Hourly Burdened Wage Rate License | | | Costs of Fulfilling Requirements License | | | Per License Cost | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | #1 | #2 | #3 | #1 | #2 | #3 | #1 | #2 | #3 | Average | Lowest |
| **Launch Site Operations Review and Approval** | | | | | | | | | | | |
| *Describe Daily Operations* | 100 | 40 | 80 | $25.62 | $39.46 | $23.77 | $2,562 | $1,578 | $1,902 | $2,014 | $1,578 |
| *Prepare LSSOD for FAA* | 200 | 0 | 80 | $25.62 | $39.46 | $23.77 | $5,124 | $0 | $1,902 | $2,342 | $0 |
| *Prepare Hazard Analyses for FAA* | 200 | 0 | 80 | $25.62 | $39.46 | $23.77 | $5,124 | $0 | $1,902 | $2,342 | $0 |
| **Total Time Saved** | **500** | **40** | **240** | | | | **$12,810** | **$1,578** | **$5,705** | **$6,698** | **$1,578** |
| **Total Time Saved (25 Percent)** | **125** | **10** | **60** | | | | **$3,203** | **$395** | **$1,426** | **$1,674** | **$395** |

Source: Spaceport Systems International, Spaceport Florida Authority, Virginia Commercial Space Flight Authority and U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans, September 2000.

## Launch Site Location Analysis

The estimated hours to perform each of the four types of launch site location analyses (Appendices A through D) are indicated in Table A.5. These analyses will have to be performed by the prospective launch site operator under the final rule for launch sites that are not located on a federal launch range. The FAA estimates that it may receive six license applications for licensees to operate launch sites not located on federal ranges from 2001 through 2010 as indicated in Table A.2. Table A.6 indicates a typical mix of analyses that might be performed for each of the six licenses.

**Table A.5 Estimated Hours That Will be Required Under the Final Rule for a Launch Site Operator Applicant to Perform Launch Site Location Analyses**

| Launch Site Location Analysis[32] | Estimated Hours |
|---|---|
| **Appendix A - Method A for determining flight corridor and identifying populated areas** | |
| *With software* [33] | 3 |
| **Appendix B - Method B for determining flight corridor and identifying populated areas** | |
| *With software* [2] | 8 |
| **Appendix C - Identify populated areas and calculate $E_c$** | |
| *Without software* | |
| **Part 1 - Within 100 miles of launch site** | |
| *Coastal* [34] *Sites* | 4 |
| *Interior* [35] *Sites* | 160 |
| **Part 2 – Downrange** | |
| *Coastal Sites* | 8 |
| *Interior Sites* [36] | 160 |
| **Totals: Parts 1 and 2** | |
| *Coastal Sites* | 12 |
| *Interior Sites* | 320 |
| **Appendix D – Suborbital launch vehicles** | |
| *Coastal Sites* | 1 |
| *Interior Sites* | 40 |

Source: Conversations between Ms. Carole Gaelick, Princeton Synergetics, Inc., Princeton New Jersey and Mr. Clay Smith, Futron Corporation, Washington, D.C., February and March 1998.

[32] It is assumed that software will be made available to the applicants for Appendices A & B, but not for Appendices C & D.

[33] Without software, it will take significantly longer.

[34] A coastal launch site has one end of the launch site boundary on the coast.

[35] An interior launch site has no launch site boundary on the coast.

[36] Launch Site with over 500 populated areas.

**Table A.6 Estimates of Cost to Applicant to Perform Launch Site Location Analyses That Will be Required Under the Final Rule – 2000 Dollars**

| Type Analyses | Location | Hours | Average Industry Loaded Wage Rate | Undiscounted Total Cost | Discounted Total Cost | Year |
|---|---|---|---|---|---|---|
| Appendix B & C & D | Interior | 368 | $29.61 | $10,896 | $10,183 | 2001 |
| Appendix A & C & D | Interior | 363 | $29.61 | $10,748 | $9,388 | 2002 |
| Appendix D | Interior | 40 | $29.61 | $1,184 | $903 | 2004 |
| Appendix A | Interior | 3 | $29.61 | $89 | $59 | 2006 |
| Appendix B & C & D | Coastal | 21 | $29.61 | $622 | $362 | 2008 |
| Appendix D | Coastal | 1 | $29.61 | $30 | $15 | 2010 |

Source: U.S. Department of Transportation, Federal Aviation Administration, Associate Administrator for Commercial Space Transportation, Licensing and Safety Division, 2000.

**Table A.7 Launch Site Location Analysis or Review [37]: Cost Differential to FAA Between the Final Rule and the Guidelines – 2000 Dollars**

| | Hours | Loaded Hourly Wage Rate | Difference[38] in Costs Per License |
|---|---|---|---|
| FAA to perform launch site location review for applicants- Current Practice | 80 | $41.80 | $3,344 |
| FAA to review and approve launch site location Analysis performed by applicants – Final Rule | 60 | $41.80 | $2,508 |
| Difference between Current Practice and Final Rule FAA hours devoted to launch site location Analysis and review | 20 | $41.80 | $836 |

Source: U.S. Department of Transportation, Federal Aviation Administration, Associate Administrator for Commercial Space Transportation, Licensing and Safety Division, 2000.

[37] For launch site not on a federal launch range.

[38] Difference between the final rule and the guidelines.

**Table A.8 Launch Site Operations Review and Approval Discounted and Undiscounted Cost Savings – Low Estimate 2000 Dollars**

| | Undiscounted Costs | | | | Discounted Costs | | |
|---|---|---|---|---|---|---|---|
| Year | FAA | Launch Site Operator | Total | Discount Factor | FAA | Launch Site Operator | Total |
| 2001 | ($15,512) | ($395) | ($15,906) | 0.934579 | ($14,497) | ($369) | ($14,866) |
| 2002 | ($31,023) | ($789) | ($31,813) | 0.873439 | ($27,097) | ($689) | ($27,786) |
| 2003 | $0 | $0 | $0 | 0.816298 | $0 | $0 | $0 |
| 2004 | ($15,512) | ($395) | ($15,906) | 0.762895 | ($11,834) | ($301) | ($12,135) |
| 2005 | $0 | $0 | $0 | 0.712986 | $0 | $0 | $0 |
| 2006 | ($15.512) | ($395) | ($15,906) | 0.666342 | ($10,336) | ($263) | ($10,599) |
| 2007 | $0 | $0 | $0 | 0.622750 | $0 | $0 | $0 |
| 2008 | ($15,512) | ($395) | ($15,906) | 0.582009 | ($9,028) | ($230) | ($9,258) |
| 2009 | $0 | $0 | $0 | 0.543934 | $0 | $0 | $0 |
| 2010 | ($15,512) | ($395) | ($15,906) | 0.508349 | ($7,885) | ($201) | ($8,086) |
| **Total** | **($108,582)** | **($2,762)** | **($111,344)** | | **($80,677)** | **($2,052)** | **($82,729)** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September, 2000.

**Table A.9 Launch Site Operations Review and Approval Discounted and Undiscounted Cost Savings – Average Estimate -2000 Dollars**

| | Undiscounted Costs | | | | Discounted Costs | | |
|---|---|---|---|---|---|---|---|
| Year | FAA | Launch Site Operator | Total | Discount Factor | FAA | Launch Site Operator | Total |
| 2001 | ($25,496) | ($1,674) | ($27,170) | 0.934579 | ($23,828) | ($1,564) | ($25,392) |
| 2002 | ($50,992) | ($3,348) | ($54,340) | 0.873439 | ($44,538) | ($2,924) | ($47,462) |
| 2003 | $0 | $0 | $0 | 0.816298 | $0 | $0 | $0 |
| 2004 | ($25,496) | ($1,674) | ($27,170) | 0.762895 | ($19,451) | ($1,277) | ($20,728) |
| 2005 | $0 | $0 | $0 | 0.712986 | $0 | $0 | $0 |
| 2006 | ($25,496) | ($1,674) | ($27,170) | 0.666342 | ($16,989) | ($1,115) | ($18,104) |
| 2007 | $0 | $0 | $0 | 0.622750 | $0 | $0 | $0 |
| 2008 | ($25,496) | ($1,674) | ($27,170) | 0.582009 | ($14,839) | ($974) | ($15,813) |
| 2009 | $0 | $0 | $0 | 0.543934 | $0 | $0 | $0 |
| 2010 | ($25,496) | ($1,674) | ($27,170) | 0.508349 | ($12,961) | ($851) | ($13,812) |
| **Total** | **($178,471)** | **($11,718)** | **($190,189)** | | **($132,606)** | **($8,707)** | **($141,312)** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September 2000.

**Table A.10 Launch Site Location Review and Approval Discounted and Undiscounted Costs and Cost Savings 2000 Dollars**

| | Undiscounted Costs and Cost Savings | | | | Discounted Costs and Cost Savings | | |
|---|---|---|---|---|---|---|---|
| Year | Launch Site Operator | FAA | Total | Discount Factor | Launch Site Operator | FAA | Total |
| 2001 | $10,896 | ($836) | $10,060 | 0.934579 | $10,183 | ($781) | $9,402 |
| 2002 | $10,748 | ($836) | $9,912 | 0.873439 | $9,388 | ($730) | $8,658 |
| 2003 | $0 | $0 | $0 | 0.816298 | $0 | $0 | $0 |
| 2004 | $1,184 | ($836) | $348 | 0.762895 | $903 | ($638) | $265 |
| 2005 | $0 | $0 | $0 | 0.712986 | $0 | $0 | $0 |
| 2006 | $89 | ($836) | ($747) | 0.666342 | $59 | ($557) | ($498) |
| 2007 | $0 | $0 | $0 | 0.622750 | $0 | $0 | $0 |
| 2008 | $622 | ($836) | ($214) | 0.582009 | $362 | ($487) | ($125) |
| 2009 | $0 | $0 | $0 | 0.543934 | $0 | $0 | $0 |
| 2010 | $30 | ($836) | ($806) | 0.508349 | $15 | ($425) | ($410) |
| **Total** | **$23,569** | **($5,016)** | **$18,553** | | **$20,911** | **($3,618)** | **$17,293** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September 2000.

**Table A.11 Total Cost Savings 2000 Dollars**
**Low and Average by Provision for FAA and Launch Site Operator**

| | Undiscounted Cost [39] and Cost Savings | | | Discounted Cost and Cost Savings | | |
|---|---|---|---|---|---|---|
| | FAA | Launch Site Operator | Total | FAA | Launch Site Operator | Total |
| **Low Cost Scenario** | | | | | | |
| Launch Site OP Review & Approval | ($108,582) | ($2,762) | ($111,344) | ($80,677) | ($2,052) | ($82,729) |
| Launch Site Location Review | ($5,016) | $23,569 | $18,553 | ($3,618) | $20,911 | $17,293 |
| **Total Low** | **($113,598)** | **$20,807** | **($92,791)** | **($84,295)** | **$18,859** | **($65,436)** |
| **Average Cost Scenario Provisions** | | | | | | |
| Launch Site OP Review & Approval | ($178,471) | ($11,718) | ($190,189) | ($132,606) | ($8,707) | ($141,312) |
| Launch Site Location Review | ($5,016) | $23,569 | $18,553 | ($3,618) | $20,911 | $17,293 |
| **Total Average** | **($183,487)** | **$11,851** | **($171,636)** | **($136,224)** | **($12,204)** | **($124,019)** |

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans. September, 2000.

[39] Cost savings are indicated in parenthesis.

For Insertion into Preamble

**Regulatory Evaluation Summary**

Final changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs each Federal agency to propose or adopt a regulation only if the agency makes a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. section 2531-2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards. Where appropriate, agencies are directed to use those international standards as the basis of U.S. standards. And fourth, the Unfunded Mandates Reform Act of 1995 requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules. This requirement applies only to rules that include a Federal mandate on State, local or tribal governments or the private sector, likely to result in a total expenditure of $100 million or more in any one year (adjusted for inflation.)

In conducting these analyses, FAA has determined this rule: 1) has benefits which do justify its costs, is not a "significant regulatory action" as defined in the Executive Order;

2) will not have a significant impact on a substantial number of small entities;

3) does not affect international trade; and

4) does not impose an unfunded mandate on state, local, or tribal governments, or on the private sector.

The FAA has placed these analyses in the docket and summarized them below. The Federal Aviation Administration (FAA) is amending its commercial space licensing regulations to add licensing requirements for the operation of a launch site. The final rule will provide launch site operators with licensing and operating requirements to protect the public from the risks associated with operations at a launch site. The FAA currently issues licenses to launch site operators on a case-by-case approach. Elements of that approach are reflected in the guidelines, "Site Operators License Guidelines for Applicants," which describe the information that applicants provide the FAA for a license to operate a launch site. The FAA's interpretation and implementation of the guidelines constitute another element of the case-by-case approach and additional elements, such as policy review, not reflected in the guidelines.

The final rule represents quantifiable changes in costs compared to the guidelines (current practice) in the following two areas. They are the launch site location

review and approval and the launch site operations review and approval. The FAA has estimated the costs and cost savings of these changes under two different cost scenarios over a 10-year period discounted at 7 percent in 2000 dollars. The total 10-year undiscounted cost savings is estimated to be between $93,000 and $172,000 (or between $65,000 and $124,000, discounted). The most burdensome cost scenario (where net cost savings is the least) to the industry will result in the costs to the launch site operators of $3,000 (or $2,000, discounted) for the launch site location reviews and approval provisions and a cost savings of $12,000 (or $9,000, discounted) for the launch site operations review and approval provisions. Although there will be no cost impact to the FAA, there will be cost savings to the FAA from the most burdensome cost scenario of $114,000 or $84,000 discounted.

There are significant nonquantifiable benefits in two areas. First, the final rule eliminates overlapping responsibilities. Second, the final rule provides increased details and specificity, which are not present in the guidelines.

**Regulatory Flexibility Determination**

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental

jurisdictions subject to regulation." To achieve that principle, the Act requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 act provides that the head of the agency may so certify and an regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

**Potentially Affected Entities**

Entities who are licensed, or have begun the licensing process, were contacted to determine their size and to gain insight into the impacts of the final regulations on the licensing process. Spaceport Florida Authority (SFA), Spaceport Systems International, L.P. (SSI), the Virginia Commonwealth Space Flight Authority (VCSFA), and the Alaska Aerospace Development Corporation (AADC) are all licensed to operate launch sites.

The Virginia Commonwealth Space Flight Authority (VCSFA) is a not-for-profit subdivision of the Commonwealth of Virginia, responsible for oversight of the activities of the Virginia Commercial Space Flight Center (VCSFC). The VCSFC is located within the boundaries of the Wallops Flight Facility (WFF). As a subdivision of the Commonwealth of Virginia, the VCSFA is empowered by the Acts of the General Assembly to do all things necessary to carry out its mission of stimulating economic growth and education through commercial aerospace activities.

The Spaceport Florida Authority (SFA) was created by Florida's Governor and Legislature as the nation's first state government space agency. The authority was established to develop space-related enterprise, including launch activities, industrial development and education-related projects. SFA operates Spaceport Florida (SPF), located on Cape Canaveral Air Station.

Launch site operator California Spaceport is located on Vandenberg Air Force Base. The launch site is operated and managed by Spaceport Systems International, L.P. who is in partnership with ITT Federal Services Corporation (ITT FSC). ITT FSC is one of the largest U.S.-based technical and support services contractors in the world.

The Kodiak Launch Complex is being built by the Alaska Aerospace Development Corporation. AADC is a public corporation created by the State of Alaska to develop aerospace related economic and technical opportunities for the state.

**Definition of Small Entities**

The Small Business Administration has defined small business entities relating to space vehicles [SIC codes 3761, 3764 and 3769] as entities comprising fewer than 1000 employees. Although the above mentioned entities have fewer than 1000 employees in their immediate segment of the business, they are affiliated with/or funded by state governments and large parent companies. The VCSFA is a not-for-profit subdivision of the Commonwealth of Virginia; the SFA is a government space agency; the SSI is affiliated with ITT FSC; and AADC is a government sponsored corporation.

## Conclusion

The FAA conducted the required review of this final rule and determined that they will not have a significant economic impact on a substantial number of small entities. Accordingly, pursuant to the regulatory Flexibility Act, U.S.C. 605(b), the Federal Aviation Administration certifies that this rule will not have a significant economic impact on a substantial number of small entities.

## International Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and where appropriate, that they be the basis for U.S. standards. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

The Licensing and Safety Requirements for Operation of a Launch Site (14 CFR Part 420) will not constitute a barrier to international trade, including the export of U.S. goods and services out of the United States. The final rule affects launch sites that are currently located or being proposed within the United States.

The final rule is not expected to affect trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

**Unfunded Mandates Reform Act Assessment**

The Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments.

Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in a $100 million or more expenditure (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

These final rule does not meet the cost thresholds described above. Furthermore, this final rule will not impose a significant cost or uniquely affect

small governments. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.